

WHAT IS CLAIMED IS:

1. An ankle brace flexion joint apparatus, comprising:

a proximal plate having an upper end and a lower end;

a distal plate connected to the proximal plate; and

a range limiting system, comprising:

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a tongue connected to the second end of the proximal plate;

two tongue-stops connected to the distal plate at a generally perpendicular orientation, wherein each of the tongue-stops includes a threaded hole through which a threaded rod is connected to the tongue-stops in threaded engagement.

2. The apparatus as claimed in Claim 1 further comprising:

a pin connecting the distal and proximal plates in pivotal arrangement;

a washer in mechanical engagement with the pin; and

a clip connected to the pin, the clip preventing the distal and proximal plates from  
5                   disassembling.

3.     The apparatus as claimed in Claim 2 wherein the pin comprises:

a generally cylindrical base;

a cylindrical stem connected generally perpendicular to a center point of the  
cylindrical base; and

5           a continuous trench on a circumference of the stem adjacent one end of the stem  
opposite the cylindrical base.

4.     The apparatus as claimed in Claim 3 wherein the clip is connected to the trench on  
the stem of the pin.

5. The apparatus as claimed in Claim 1 further comprising a conduit located on the distal plate and partially surrounding each of the threaded rods.
6. The apparatus as claimed in Claim 1 further comprising ankle brace connection points located on the proximal and distal plates, each ankle brace connection point, comprising a generally circular-shaped base surrounding a hole.
7. The apparatus as claimed in Claim 1 wherein the proximal plate further comprises a distal plate connection point having a generally cylindrical depression with a hole located generally in the middle of the depression.
8. The apparatus as claimed in Claim 1 wherein the distal plate further comprises a proximal plate connection point having a generally cylindrical depression with a hole located generally in the middle of the depression.

9. A flexion joint apparatus, comprising:

a proximal plate having a tongue protruding from an end of the proximal plate;

a distal plate having a protrusion connected generally perpendicular to each side of the distal plate, wherein the tongue of the proximal plate overlaps a portion of the distal plate and travels a path along the distal plate, each end of the path terminating in a respective one of the protrusions; and

a pin connected through the proximal and distal plates.

10. A flexion joint apparatus, comprising:

a body including a proximal plate having a tongue and distal plate having a protrusion on either side of the distal plate; and

means for limiting the relative motion of the proximal plate with respect to the distal plate.

11. An ankle brace system, comprising:

an ankle brace;

a flexion joint apparatus connected to the ankle brace, the flexion control apparatus  
including:

5 a proximal plate having an upper end and a lower end;

a distal plate connected to the proximal plate; and

a range limiting system, comprising:

a tongue connected to the second end of the proximal plate;

10 two tongue-stops connected to the distal plate at a generally  
perpendicular orientation, wherein each of the tongue-stops  
includes a threaded hole through which a threaded rod is  
connected to the tongue-stops in threaded engagement.

12. A method of installing an ankle joint in an ankle brace, comprising:

pouring an ankle cast;

modifying the cast;

locating the ankle axis;

5 square the cast with a flexion control ankle joint hinge apparatus;

vacuum forming plastic on the cast;

cooling the plastic; and

removing the brace.